

© Bikini Atoll

Welcome to the Internet World Wide Web site for Bikini Atoll. Bikini is located in the central Pacific, and is one of a number of atolls in the Republic of the Marshall Islands. It is perhaps best known for its role in a series of nuclear tests conducted by the United States in the 1940s and 1950s.



Above: The March 1, 1954 Bravo hydrogen bomb crater. Photo © Hiro Toyosaki.

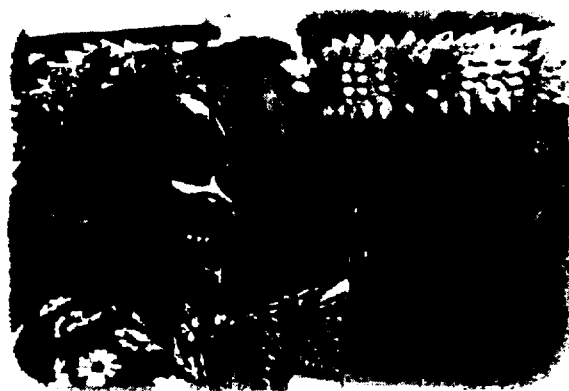
Today, while the people of Bikini have yet to resettle their homeland, the island is populated by Marshalls Dive Adventures employees, International Bridge Corporation construction workers and some U.S. Department of Energy staff. There is, however, a large population of Bikinians living elsewhere in the Marshall Islands and overseas who hope to soon be able to return to their homeland.

While the nuclear testing program has brought enormous hardship to the Bikini people, it offers unique opportunities to outsiders. Bikini has now been opened as a dive and tourism destination, and has since drawn praise from many around the world. A representative from *Skin Diver Magazine* recently proclaimed Bikini as one of the top five dive destinations in the world.

The information in this site is drawn largely from *The People of Bikini: From Exodus to Resettlement*, by Jack Niedenthal. Copies of the full report are available upon request from the address below.

From these pages, you can access the following:

- **Bikini Facts**
Statistics about the atoll and its people.
- **History**
Traces the unique history of the island, nuclear testing, and the status of the Bikini people and their land today.
- **Reparations for Damages**
Discusses issues concerning the compensation paid to Bikinians by the U.S. Government.
- **Radiological Cleanup and Future Plans**
Looks at ongoing steps taken to make the atoll safe for habitation and outlines some future plans for Bikini.
- **Resettlement Program to Date**
In-depth analysis of the relocation and resettlement program for the Bikinian people.
- **Dive/Tourism Information**
Learn more about the exiting opportunities that await divers and other visitors to Bikini today.
- **What About Radiation in Bikini Atoll?**
Addresses concerns of visitors regarding remaining radiation levels in the atoll.
- **Bikini Atoll Government**
Members of Bikini Atoll local government, overseas representatives, and other useful addresses.
- **Bikini Anthem**
Lyrics of the Bikini Anthem, composed in 1946.
- **News**
Recent news items concerning Bikini Atoll.
- **Links to Related Internet Resources**
A page of links to other locations on the Internet concerning Bikini Atoll and the region.



Above: Bikinian mother and child. Photo © James D. Watt.

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Bikini Atoll

The Radiological Cleanup and Future Plans for Bikini Atoll



U.S. Senator Daniel Akaka and LLNL scientist Bill Robinson discussing the radiological condition of Bikini Island, 1996 - Photo © Jack Niedenthal

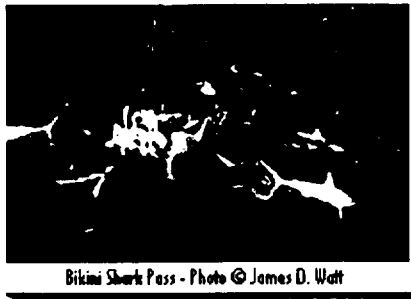
The tasks now before the Bikinian leaders loom large. At the close of fiscal year 1995, all infrastructure for the cleanup of Bikini island was in place on Eneu island, which, after some remediation and extensive evaluation by scientists from all over the world, has been declared safe for habitation. Ground breaking ceremonies on Bikini island are scheduled for sometime in 1997. Two cleanup options for the island of Bikini are currently being discussed.

Since the early 1980's the leaders of the Bikinian community have insisted that, because of what happened in the 1970's with the aborted return to their atoll, they want the entire island of Bikini excavated and the soil removed to a depth of about 15 inches. Scientists involved with the Bikinians have stressed that while the excavation method would rid the island of the cesium-137, the

removal of the topsoil would severely damage the environment, turning it into a virtual wasteland of wind-swept sand. The Council, however, feeling a responsibility toward their people, have repeatedly contended that a scrape of Bikini is the only way to guarantee safe living conditions on their island for their future generations.

The islanders believe that if they scrape the island in a patchwork fashion - as opposed to a complete excavation - the environmental impact could be minimized as one section could be refurbished and replanted before moving on to another. With the excess soil that is removed from the island, the Bikinians favor a plan to build a causeway between Bikini and Eneu islands. The 5.2 mile reef between these two islands is currently used - at low tide - for the transport of heavy equipment between the two construction sites. Another scrape option often discussed by the Council regarding the storage of the contaminated soil involves shipping it to Nam island on the northwestern edge of Bikini Atoll where the one mile wide, 400 feet deep, Bravo crater is located. The soil would be stored on land.

Virtually all the scientists that have studied Bikini, however, favor the well documented and proven method of spreading potassium fertilizer over the entire island. This potassium-block method, which prevents the uptake of cesium because potassium, which is atomically similar to cesium, is what the food crops are looking for in the first place when they use the radiation as a source of food, has been studied in detail over the course of the past twenty years by Dr. Bill Robison of the Lawrence Livermore National Laboratory and a number of other scientific organizations.



Bikini Shark Pass - Photo © James D. Watt

A compromise suggestion put forth by the scientists is that they scrape only the living area, which, traditionally, is situated along the lagoon side of Bikini, and then use potassium fertilizer on the remaining land area. In light of new pronouncements by a committee of world renowned scientists convened by the International Atomic Energy Agency, the Bikinians are currently giving this method serious consideration. Before this method could be selected the U.S. government

would have to promise to provide the people returning a supplemental food program, and they would have to issue a statement saying that they support and agree with the scientific pronouncements regarding this method of cleanup.

With regard to the issue of nuclear waste storage on Bikini Atoll from outside sources and countries, the Bikini Council, in May of 1995, passed a resolution and sent a letter to the national government stating that "because our old men and old women still desire to return to their homeland...we will not be pursuing the nuclear waste option for our islands."

In January of 1996, to provide an economic base for a possible future resettlement of Bikini Atoll and to supplement the income from their already existing trust funds, the Bikini Council signed an agreement with Marshalls Dive Adventures, a division of Robert Reimers Enterprises, a Marshallese owned business in Majuro, to establish dive tourism on Bikini. As a result of Operation Crossroads, on the bottom of Bikini's lagoon rests the world's only aircraft carrier and the largest ship in the world available for diving (880 feet long), the *U.S.S. Saratoga*, as well as the *Nagato*, Admiral Yamamoto's flagship from where he ordered the Japanese Imperial Navy's attack on Pearl Harbor at the beginning of World War II, along with one other battleship, the *Arkansas*, two submarines, the *Apogon* and the *Pilotfish*, two destroyers, the *Lamson* and the *Anderson*, one frigate, the *Sakawa*, and one merchant craft, the *Carlisle*. All of these vessels have been declared radiologically safe for diving by Dr. Bill Robison of the Lawrence Livermore National Laboratory, are buoyed, and are available for diving on Bikini.

The reviews of the Bikini dive experience have all been very positive. Jim Delgado of the the U.S. Park Service said, "The ships on Bikini - the only vessels ever destroyed by a nuclear blast - serve as a reality check for the world." A representative from *Skin Diver* magazine told the *Marshall Islands Journal*: "Bikini is possibly one of the top five dive destinations in the world." Fabio Amaral, the Bikini dive master, said that "Everybody who likes wreck diving is dying to go there. Bikini is unique." James D. Watt, a world famous marine wildlife photographer, said after a recent visit to Bikini, "The opening of Bikini Atoll to divers heralds an exciting time to the sports diving community. The wrecks of Bikini are world class in quality and interest to divers. I made my first trip to Bikini to work on a TV documentary. What I found was of such high quality that I returned two months later on my own just to do some more exploration. I truly believe that Bikini will soon be a mecca for the sports diving community...I can't wait to return again."

Marshalls Dive Adventures "Bravo" dive boat
- Photo © Jack Niedenthal



Accommodations on Bikini - Photo © Matthew D. Harris

Though the Bikinians believe that dive tourism has the potential to become a cornerstone for their resettlement plan, their leaders continue to lobby the U.S. Congress for additional funding as the islanders maintain that it is the obligation of the U.S. government to provide for the cleanup all 23 islands of the atoll rather than just Bikini and Eneu islands. The people of Bikini also continue to make annual sojourns to their atoll, which in the past year was visited by two U.S. senators, Frank Murkowski from Alaska and Daniel Akaka from Hawaii. In a recent *Los Angeles Times* article, Senator Frank Murkowski, speaking about the U.S. government's commitment to the people of Bikini, said, "There is not only a legal but a moral obligation on our part."

Bikini Atoll

Reparations for Damages



BAKER Day at Bikini - U.S. Air Force photo

In 1978, after the people of Bikini were removed from their atoll for a second time, the U.S. government funded a \$6 million trust fund entitled, **The Hawaiian Trust Fund for the People of Bikini (U.S. Public Law 94-34)**. This trust fund currently produces \$31,000.00 of income per month which is used as a per capita distribution (approximately \$14 per person). Because of a devaluation in the bond market over the past several years, and because expenditures were often more than the revenue of the trust, the fund today is worth approximately \$5.3 million.

Internal steps have been taken by the local government to correct the downward trend of this fund. This trust fund will exist until the year 2006.

In 1982 the people of Bikini received a second trust fund from the U.S. government totaling \$20 million entitled, **The Resettlement Trust Fund for the People of Bikini (U.S. Public Law # 97-257)**. This trust fund was later supplemented (U.S. Public Law # 100-446) with \$90 million in additional funds to provide for a cleanup of Bikini and Eneu islands of Bikini Atoll. These funds are also used for construction and resettlement activities for Bikinians living on Kili Island and Majuro Atoll, including Ejit Island. A typical fiscal year budget ranges from between \$7 million and \$10 million. These funds pay for local government operations (Council employees, scholarships and a medical plan for Bikinian students living and going to school abroad, travel for meetings, attorney's fees, etc.) The total value of the fund as of 1 October 1996 was approximately \$107.5 million.

In 1986, an agreement with the U.S. government, the Compact of Free Association (COFA), became effective. Section 177 of the COFA pledged reparations for damages to the Bikinians as well as to other northern atolls in the Marshall Islands. The damage payment for Bikini amounted to \$75 million to be paid over 15 years (\$5 million per year). Beginning in 1987, \$2.4 million has been distributed annually to the total population of Bikinians in quarterly per capita payments. \$2.6 million of this \$5 million annual payment goes into a trust entitled, **The Bikini Claims Trust Fund (U.S. Public Law #99-239)**. This trust fund also provides our community with an annual distribution of 35% of the income over a fiscal year. The Bikini Claims Trust Fund is currently worth approximately \$38.3 million. While the quarterly payments end in the year 2002, this trust fund shall exist in perpetuity and shall continue to provide the Bikinians with an annual percentage of the income from the trust.

Bikini Atoll

Resettlement Program to Date

Development of the infrastructure to support the clean-up and resettlement programs on Bikini Atoll started early in calendar year 1991. The program was concentrated at Eneu Island, which had been declared safe for habitation, and is the main support base for the clean-up activities. Infrastructure improvements to date include:

- Roads and island clearing
- Construction dock and small boat landing
- Power plant and electrical distribution system
- Water well, pumping storage and distribution systems
- Construction support complex, known as the Eneu Field Station, that includes project offices, a satellite telephone and fax unit, and kitchen, dining, quarters and recreation facilities for a work force of 40 to 64 men.
- Visitor quarters for 60-100 people
- Upgraded airport system with renovated airport building, runway lighting system, Precision Path Indicator System and refueling station.
- Diesel fuel and automotive gasoline storage



Kili Island, 1996 - Photo ©
Jack Niedenthal

In addition a medium draft dock and small boat landing were completed at Bikini Island by the close of Fiscal Year 1995.

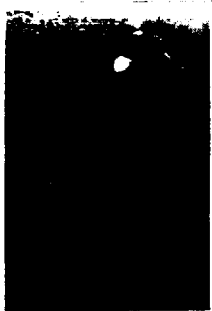
During Fiscal Year 1996 the Scientific Field Station at Bikini Island has been upgraded to provide a Dive Program Support Base. Upgrades also include a new power plant and fresh water production unit.

Also during Fiscal Year 1996 the King Juda Health Physics Laboratory and a satellite construction camp will be completed and in operation for the beginning of the clean-up in 1997.

Bikini Atoll

Bikini Atoll Dive/Tourism Information

Ships Buoyed at the Bottom of Bikini Lagoon



Bikini wreck diving - Photo ©
James D. Watt

Anderson

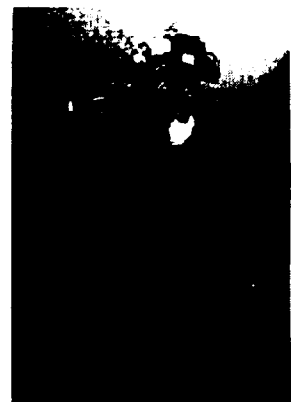
An American destroyer which received ten battle stars during World War II. She served as a carrier screen in the Coral Sea, Midway, the Solomons, Guadalcanal, and Tarawa. She carried 2929 barrels of fuel oil and 168 barrels of diesel oil and was at 95% of capacity of both fuel and ordnance when she was sunk by ABL. 348 feet long. (1 buoy)

Apogon

An American submarine with normal fuel capacity of 54,000 gallons, and an emergency load of 116,000 gallons. Eric Hanauer of Discover Diving commented, "The shadowy silhouette of *Apogon's* conning tower, completely enveloped by glassy sweepers is one of the most beautiful sights I've ever seen underwater." She received five battle stars and was sunk by BAKER. 312 feet long. (1 buoy)

Arkansas

A 29,000 ton American battleship that survived two world wars had a fuel capacity of 37,779 barrels of fuel oil, 119 barrels of diesel oil, and 4,000 gallons of gasoline. The Arkansas took part in the Presidential Naval Review in the Hudson River, October 14, 1912 and then carried President William H. Taft to the Panama Canal Zone for an inspection of the unfinished canal. On April 22, 1914, she assisted in the occupation of Veracruz, Mexico. In December of 1918 she formed part of the escort carrying President Woodrow Wilson to France. In World War II, the Arkansas escorted convoys across the Atlantic. She remained in European waters for the invasion of Normandy where she performed yeoman service at Omaha Beach, the bombardment of Cherbourg and the invasion of southern France. She then moved to the Pacific to participate in action at Iwo Jima and Okinawa. The Arkansas, at rest in Bikini's lagoon in 140 feet of water, received four battle stars for her service in World War II and was sunk by BAKER. 562 feet long. (1 buoy)



Bridge of the Nagato - Photo ©
James D. Watt

Carlisle

A merchant craft named after a county in Kentucky, she had fuel capacity of 9,695 barrels of fuel oil and 375 barrels of diesel oil. She made three voyages to the west coast from Hawaii and Japan and shorter passages among South Pacific islands. She sits upright on the bottom and is guarded by a magnificent school of skip jacks and there is almost always a shark sitting on this ship. Fuel and ammunition loads during test Able was 95% capacity. The *Carlisle* was sunk by the ABL blast. 426 feet long. (1 buoy).

Lamson

The American destroyer Lamson received five battle stars for service during World War II. Her fuel capacity was 3,600 barrels, her diesel oil capacity was 110 barrels, and she was at 50% capacity for both fuels and ordnance when she was sunk by ABL. Underwater she appears as a pirate ship. She is a Bikini dive master favorite. 341 feet

long. (1 buoy)



Pre-Blast Nagato - U.S.
Government photo

Nagato

Japanese Flagship to the Japanese Navy, she was Admiral Isoroku Yamamoto's floating fortress during Japan's World War II invasion of Pearl Harbor. The 32,720 ton battleship is at rest upside down in 170 feet of water; her bridge is accessible at 150 feet, the hull and monstrous props at 110 feet. She had a fuel capacity of 1,600 tons of coal. Fuel and 348 feet long ammunition loads during both ABLE and BAKER tests were, respectively, 15% and 10% of capacity. 708 feet long. (2 buoys)

Pilotfish

An American submarine with normal fuel capacity of 54,000 gallons. Fuel and ammunition loads during test BAKER were 95% of capacity. 5 battle stars, patrolled the Northern Marianas, Bonin Islands, the East China Sea, and the southeast coast of Japan. 312 feet long. (1 buoy)

Sakawa

A Japanese ship which was sunk by ABLE with an unknown fuel load and apparently no ordnance. Launched in April of 1944, she was later surrendered to the U.S. in August of 1945. 532 feet long. (1 buoy)

Saratoga

Commissioned in 1927, an American aircraft carrier 880 feet in length and weighs 39,000 tons, it rests in Bikini's lagoon at a depth of 180 feet. Her bridge is easily accessible at 40 feet, her deck at 100 feet, and the hanger for the hellcats at 125 feet. These Helldivers and bombs are still on display complete with all dials and controls. Sara has a fuel capacity of 63,200 barrels of fuel oil, 249 barrels of diesel oil, and 132,264 gallons of gasoline. Fuel and ammunition loads during test BAKER were 10% of capacity and 67% capacity respectively. She was reported sunk by the Japanese seven times during World War II. She received seven battle stars. 880 feet long. (3 buoys: bow, stern and bridge)



The USS Saratoga, the world's largest diveable underwater wreck, in full glory - U.S. Government photo

Ships Not Buoyed at the Bottom of Bikini Lagoon

4 - LCT-414
LCT-812
LCT-1114
LCT-1175
LCT-1187
LCT-1237
LOM-60

The aforementioned "L" vessels were landing craft with little known history. Some were sunk in the lagoon, some were towed to sea and sunk after the tests, and at least one was "obliterated."

ARDC-13 - A small repair dock.
Gilliam - A merchant vessel
YO-160 - A concrete oil barge

Bikini Dive Masters & Qualifications



Fabio Amaral - Photo ©
James D. Wall

Fabio Amaral

C.M.A.S. 2 star instructor, PADI Instructor - Master Scuba Diver Trainer, HSA (Handicapped Scuba Association) Instructor, Equipment Repair Technician, NAUI Lifetime Instructor, IANTD Nitrox Diver, IANTD Nitrox Blender and Gas Blender Instructor, IANTD Technical Deep Diver and Deep Air Diver, IANTD Technical Nitrox Instructor, and underwater videography.

Matt Harris

PADI Instructor - Master Scuba Diver Trainer, Yacht Master, Underwater photography, IANTD

Technical Deep Diver and Deep Air Diver, and Technical Nitrox Supervisor.



Edward Maddison - Photo
© Jack Niedenthal

Scott Herman

NAUI Instructor, Equipment Repair Technician, IANTD Technical Deep Diver and Deep Air Diver, and Technical Nitrox Supervisor

Edward Maddison (Bikini Islander)

NAUI Open Water Diver and PADI Advanced Dive Master.

What Others Have Said



Grey Reef Sharks - Photo
© Matthew D. Harris

"...The amazing thing about Bikini is how alive it is: a white sand island full of coconut palms swaying over a perfect turquoise sea, fish and sea turtles swimming languorously by the beach..."

- Nicholas D. Kristof, *The New York Times*, March 1997

"We spent three weeks on Bikini Atoll and consider it to be one of the best (if not the best) dive destination that we have ever visited."

- Tom and Patty Mount, CEO and President of IANTD, Inc. April 1997

"Bikini Atoll offers some of the best diving in the world."

- Tad Friend, *Outside Magazine*, March 97

"Bikini is the Mount Everest of wreck diving."

- Anthony Sommer, *Arizona Republic*, 9/22/96

"If you are into wreck diving or war history, it's the trip of a lifetime."

- Eric Hanauer, *Discover Diving Magazine*, Sept/Oct 96

"Those who make the effort will be rewarded with one of the more memorable - and perhaps exclusive - diving experiences in the world."

- Pierce Hoover, *Sport Diver Magazine*, Oct. 96

"To call [Bikini] a diver's paradise is to sell it short."

- Jim Delgado, U.S. National Park Service,
Men's Journal, Oct. 96

"...With fishermen absent for 50 years, Bikini's waters [have] returned to a rare, undisturbed condition."

- Bill Curtsinger, *National Geographic Magazine*, Jan. 95

"...After being on Bikini and seeing this spectacular atoll with its pure white sand beaches, and after diving on the wrecks, I would call Bikini the ultimate island experience..."

- Nick Versteeg, the A & E History Channel/Dusmar Productions, Letter of April 30, 1997



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Bikini Atoll

What About Radiation on Bikini Atoll?

Since the debacle of the aborted move to Bikini in the 1970's, a number of scientific studies have been performed on Bikini Atoll. Beginning in the late 1970's through to the present day, Lawrence Livermore National Laboratory has studied the radiological conditions of Bikini, usually with two missions per year. In the early 1980's, the Bikini Atoll Rehabilitation Committee [BARC], a group of highly regarded American scientists, completed and submitted a report about the radiation on Bikini to the U.S. Congress. In the 1990's, the Bikinians have had their own independent scientist, Herwig Paretzke, a German citizen, review the findings of the aforementioned studies and also the Nationwide Radiological Study that was performed by Dr. Steven Simon and a group of scientists from all over the world for the Marshall Islands government. In addition, the National Academy of Science also released a report about Rongelap Atoll in which Bikini Atoll was also discussed. All of this information was submitted to a panel of internationally renowned scientists, convened by the International Atomic Energy Agency, for review in December of 1995.

The IAEA's Bikini Advisory Group preliminary findings issued in 1996 contain the following statements with regard to background radiation on Bikini:

"It is safe to walk on all of the islands...The Advisory Group reaffirmed: although the residual radioactivity on islands in Bikini Atoll is still higher than on other atolls in the Marshall islands, it is not hazardous to health at the levels measured. Indeed, there are many places in the world where people have been living for generations with higher levels of radioactivity from natural sources - such as the geological surroundings and the sun - than there is now on Bikini Atoll...By all internationally agreed scientific and medical criteria...the air, the land surface, the lagoon water and the drinking water are all safe. There is no radiological risk in visiting the lagoon or the islands. The nuclear weapon tests have left practically no cesium in marine life. The cesium deposited in the lagoon was dispersed in the ocean long ago.

"The main radiation risk would be from the food: eating locally grown produce, such as fruit, could add significant radioactivity to the body...Eating coconuts or breadfruit from Bikini Island occasionally would be no cause for concern. But eating many over a long period of time without having taken remedial measures might result in radiation doses higher than internationally agreed safety levels."